

What is claimed is:

1. A photoluminescent aluminate comprising:  
alloy base material including strontium, and a dopant comprising one or more lanthanide earth elements and a transition metal element.
2. A photoluminescent aluminate as recited in claim 1, wherein said lanthanide earth elements comprise europium and dysprosium.
3. A photoluminescent aluminate as recited in claim 1, wherein said lanthanide earth elements comprise europium, dysprosium and gadolinium.
4. A photoluminescent aluminate as recited in claim 1, wherein said base alloy material further includes Boron.
5. A photoluminescent aluminate as recited in claim 1, wherein said base alloy material comprises  $\text{SrAl}_2\text{O}_4$ .
6. A photoluminescent aluminate as recited in claim 1, wherein the transition metal element is scandium.
7. A photoluminescent aluminate as recited in claim 6, wherein the scandium comprises about 0.01 to 3.0 mole percent.
8. A photoluminescent aluminate as recited in claim 1, wherein the base alloy material comprises  $\text{Sr}_4\text{Al}_{14}\text{O}_{25}$ .
9. A photoluminescent aluminate as recited in claim 1, wherein the base alloy material comprises  $\text{SrAl}_4\text{O}_7$ .
10. A photoluminescent aluminate as recited in claim 6, wherein the base alloy material comprises  $\text{Sr}_4\text{Al}_{14}\text{O}_{25}$ .
11. A photoluminescent aluminate as recited in claim 6, wherein the base alloy material comprises  $\text{SrAl}_4\text{O}_7$ .
12. A photoluminescent aluminate comprising  $\text{SrAl}_2\text{O}_4\cdot\text{Eu,Dy,Gd,Sc}$  wherein the following materials and quantities are combined:

$\text{SrCO}_3$  (1.0 mole)  
 $\text{Al}_2\text{O}_3$  (1.0 mole)  
 $\text{Eu}_2\text{O}_3$  (0.005 mole)  
 $\text{Dy}_2\text{O}_3$  (0.01 mole)  
 $\text{Gd}_2\text{O}_3$  (0.005 mole)  
 $\text{Sc}_2\text{O}_3$  (0.005 mole)  
 $\text{B}_2\text{O}_3$  (0.2 mole)

13. A photoluminescent aluminate as recited in claim 12, wherein said  $\text{SrCO}_3$  and  $\text{Al}_2\text{O}_3$  are combined to form  $\text{SrAl}_2\text{O}_4 + \text{O}_3$ .

14. A photoluminescent aluminate as recited in claim 13, wherein said  $\text{SrAl}_2\text{O}_4$  is heat treated prior to being combined with the remaining material at approximately  $1300^\circ\text{C}$ .

15. A photoluminescent aluminate as recited in claim 13, wherein said  $\text{SrAl}_2\text{O}_4$  is heat treated prior to being combined with the remaining material at approximately  $1450^\circ\text{C}$ .

16. A photoluminescent aluminate comprising  $\text{Sr}_4\text{Al}_{14}\text{O}_{25}:\text{Eu,Dy,Sc}$  wherein and  $\text{Sr}_4\text{Al}_{14}\text{O}_{25}:\text{Eu,Sc}$  according to the method described above wherein the following materials and quantities are combined:

$\text{SrCO}_3$  (4.0 mole)  
 $\text{Al}_2\text{O}_3$  (7.0 mole)  
 $\text{Eu}_2\text{O}_3$  (0.005 mole)  
 $\text{Dy}_2\text{O}_3$  (0.01 mole)  
 $\text{Sc}_2\text{O}_3$  (0.005 mole)  
 $\text{B}_2\text{O}_3$  (0.2 mole)